Waste Characterization of Remediation Waste

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General Waste Characterization

- Listed Waste (Part 111)
- Characteristic Waste (Part 111)
- Liquid Industrial Waste (Part 121)
- Solid Waste (Part 115)
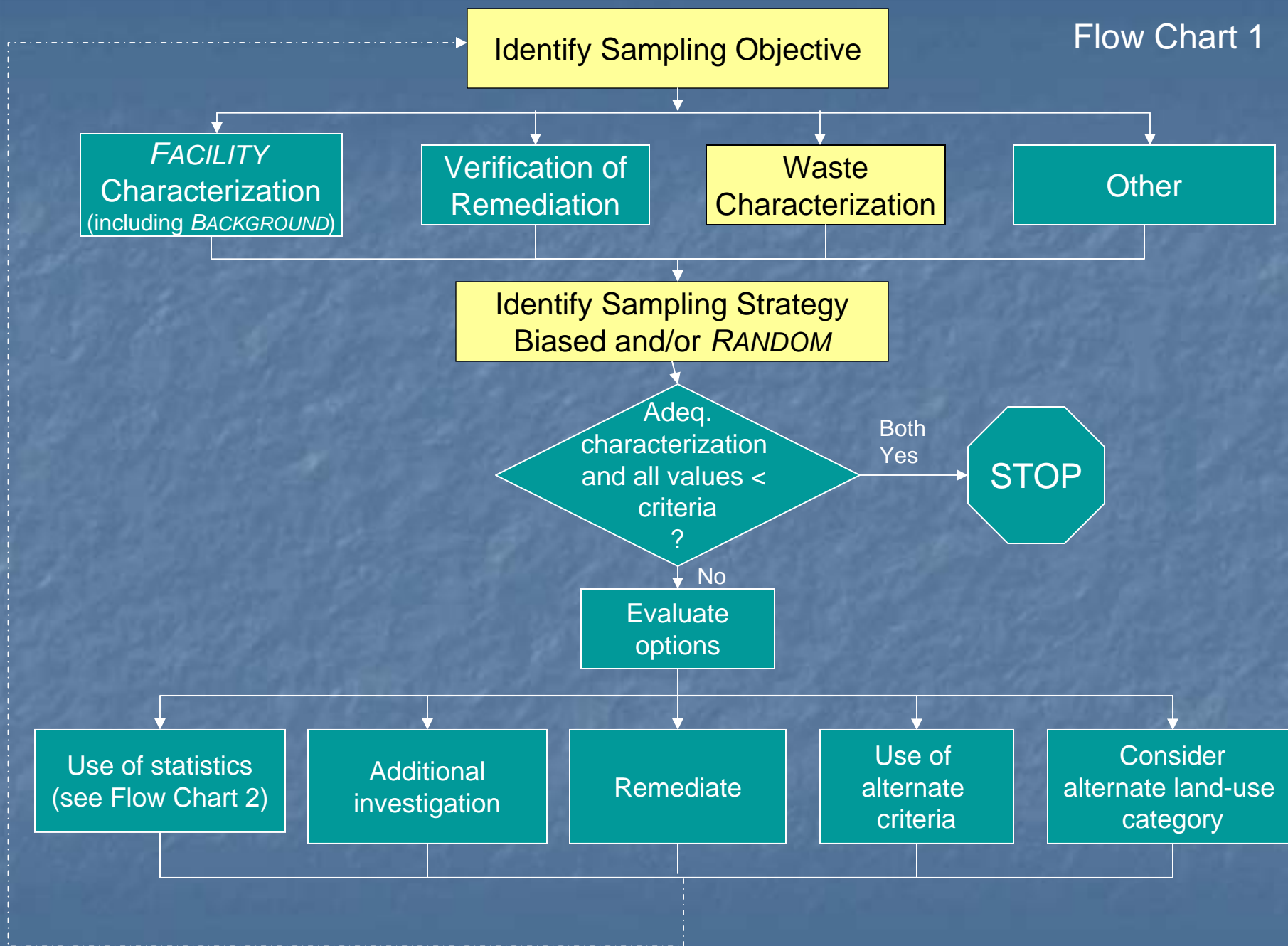- Inertness Designation (Part 115)

Hazardous Waste Characterization

- Listed Hazardous Waste
  - No Presumption of Listing
  - FKPU (Waste Codes from Rules)
  - Michigan K&U
  - Mixture and Derived From Rules
  - Contained in Policy

Hazardous Waste Characterization

- **Characteristic Hazardous Waste**
  - Ignitable, Corrosive, Reactive and Toxic
  - Severely Toxic-Michigan Characteristic
  - Can exit Part 111 through treatment

Flow Chart 1

Identify Sampling Objective

FACILITY Characterization (including BACKGROUND)

Verification of Remediation

Waste Characterization

Other

Identify Sampling Strategy Biased and/or RANDOM

Adeq. characterization and all values < criteria ?

Both Yes → STOP

No

Evaluate options

Use of statistics (see Flow Chart 2)

Additional investigation

Remediate

Use of alternate criteria

Consider alternate land-use category

Characterization Sampling

- May use a biased or *RANDOM* sampling strategy, as appropriate

- Knowledge is the key

- Use data collected specifically for characterization

Comparison to Criteria

- Contained-In; Type B Criteria for Media
  - Point-by-point (biased or *RANDOM* sampling)
  - 95% UCL for the mean (*RANDOM* sampling)
- Characteristic Waste; Definitions
  - Point-by-point (biased or *RANDOM* sampling)
  - 90% UCL for the mean; Toxicity Characteristic
  - Statistics not appropriate for certain characteristics
    - Non-numeric criteria
    - Ignitable

Remediation Examples

Conclusions: Waste Characterization for Remediation

- Characterization important for planning remediation
- Can use biased or *RANDOM* sampling
- Collect discrete samples unless authorized by DEQ